

Biology Study Guide – Cell Division
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Cell growth and Reproduction – Mitosis

*** Mitosis explains cell division, growth, and development as a consequence of an increase in cell number, cell size, and/or cell products.

What does cell division have to do with cell size? Why do cells need to divide?

A cell's size can slow the rate of diffusion as cells need a way to limit their growth. Eventually, cells divide before they become too big and unable to function well.

What are the four main phases of mitosis called, for cell division? Why do they have to occur in order to cells? What is going on in each body right now with cell division?

Prophase, Metaphase, Anaphase, and Telophase of first body parts. Explain each and cells

What is cytokinesis in a typical animal cell? **Cytokinesis**

What is cytokinesis in a plant cell? **Cytokinesis**

What is the main structural difference that sets up each type of cell division? (What part of the cell is different?) **Centrioles**

What is the structure that holds sister chromatids together? **Centromeres**

What is the main part of chromosomes that codes for the cell's size and shape?

Nucleolus **Chromosomes**

What are homologous pairs in diploid chromosomes? **Homologous**

Explain the order of the chromosomal pairs:

Chromosomes	2n (diploid)	n (haploid)
Human	46	23
Yeast	16	8
Frog	24	12

What is the typical number of chromosomes in corn? **2n**

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What is the difference between the 2n and n numbers? **2n** is twice as many as **n** **2n**

In the chromosome number related to the complexity of the organism? **2n**

What is the number of chromosomes in a human body cell? **46**